

Amendments to the Claims

The following listing of claims replaces all previous claim listings and versions.

1. (Currently Amended) A method for producing an adhesive surface on a substrate which can be bonded for subsequent bonding to another substrate comprising[:] treating [[the]] a substrate surface that includes an oxide layer by a wet chemical etching process that comprises immersing the substrate into a bath that includes an etchant to remove [[an]] the oxide layer and [[to]] provide an etched hydrophobic surface; [[and]] directly followed by exposing the etched hydrophobic surface to a gaseous ozone atmosphere within a closed container to provide a dry hydrophilic adhesive surface on the substrate to enhance subsequent bonding to the other substrate.
2. (Original) The method according to claim 1 wherein the wet chemical etching includes an aqueous hydrofluoric acid solution (HF) as an etchant.
3. (Previously Presented) The method according to claim 1 wherein the wet chemical etching includes an etchant that includes hydrofluoric acid (HF), ammonium fluoride (NH₄F) and water.
4. (Original) The method according to claim 1 wherein the duration of wet chemical etching is in the range of about 5 seconds to about 30 minutes.
5. (Original) The method according to claim 1 wherein the temperature of wet chemical etching is in the range of between about room temperature to about 80°C.

Claims 6-10 (Cancelled)

11. (Previously Presented) The method according to claim 1 wherein the substrate is a silicon wafer.
12. (Previously Presented) The method according to claim 1 wherein the substrate is a metal.

13. (Currently Amended) The method according to claim 11 which further comprises bonding the etched surface of one substrate to an etched surface of another substrate, by laying one wafer on the other and applying pressure to one of the substrates to form a bonded pair of substrates.

14. (Previously Presented) The method according to claim 13 which further comprises annealing the bonded substrates to increase bonding strength to between 0.28 and 0.38 MPa when measured at room temperature.

15. (Currently Amended) The method according to claim 14, wherein the annealing temperature is approximately about 500°C.

16. (Currently Amended) A method for producing an adhesive surface on a substrate ~~which can be bonded for subsequent bonding~~ to another substrate comprising[:] treating a substrate surface that includes an oxide layer by a wet chemical etching process that ~~[[includes]] comprises~~ immersing the substrate into a bath that includes hydrofluoric acid as an etchant to remove ~~[[an]] the~~ oxide layer and ~~[[to]] provide an etched hydrophobic surface,[[; and]] directly followed by~~ exposing the etched hydrophobic surface to a gaseous ozone atmosphere within a closed container to provide a dry hydrophilic adhesive surface on the substrate to enhance subsequent bonding to the other substrate; and then bonding the adhesive surface of the substrate to a surface of another substrate by laying one substrate on the other and applying pressure to one of the substrates to form a bonded pair of substrates, wherein the adhesive surface of the substrate enhances bonding to the other substrate.

17. (Previously Presented) The method according to claim 16 wherein the wet chemical etching comprises a solution of the hydrofluoric acid with ammonium fluoride and water.

18. (Previously Presented) The method according to claim 17 wherein the duration of wet chemical etching is in the range of about 5 seconds to about 30 minutes.

19. (Previously Presented) The method according to claim 18 wherein the temperature of wet chemical etching is in the range of between about room temperature to about 80°C.

20. (Currently Amended) The method according to claim 16 which further comprises treating the surface of the other substrate by the same wet chemical etching process prior to bonding the etched surfaces together of one substrate to an etched surface of another substrate, by laying one wafer on the other and applying pressure to one of the substrates to form a bonded pair of substrates.

21. (Currently Amended) The method according to claim [[20]] 16 which further comprises annealing the bonded substrates to increase bonding strength to ~~between 0.28 and 0.38 MPa when measured at room temperature~~.

22. (Currently Amended) The method according to claim 21 wherein the annealing temperature is approximately about 500°C.

23. (Previously Presented) The method according to claim 16 wherein the substrate is a silicon wafer.

24. (Previously Presented) The method according to claim 16 wherein the substrate is a metal.

25. (New) A method for providing an adhesive surface on a substrate surface that includes an oxide layer to prepare that surface for subsequent bonding to another substrate, the method consisting of immersing the substrate into a bath that includes hydrofluoric acid as an etchant to remove the oxide layer and provide an etched hydrophobic surface, followed by exposing the etched hydrophobic surface to a gaseous ozone atmosphere within a closed container to provide a dry hydrophilic adhesive surface on the substrate, wherein the adhesive surface of the substrate enhances bonding to the other substrate.